

REMARKS

Applicant has amended the claims 4, 6, 14, 20, 27, 29 and 30 and canceled the claims 1, 3, 7, 11, 17, 19, 22 and 25. Applicant respectfully submits that these amendments to the claims are supported by the application as originally filed and do not contain any new matter. Still further, Applicant respectfully submits that the amendments to the claims do not raise any issues which would require further consideration and/or search since they are merely provided for the purposes of clarifying the claims and the dependency of the claims has remained substantially the same. Accordingly, the Final Office Action will be discussed in terms of the claims as amended.

The Examiner has rejected the claims 1, 4 through 6, 7, 14 through 16, 17, 20 through 21, 22 and 27 through 30 under 35 USC 112, first paragraph. Applicant has canceled the claims 1, 3, 7, 11, 17, 19, 22 and 25 and amended the dependency of the claims. Accordingly, Applicant respectfully submits that the claims 4 through 6, 14 through 16, 20, 21 and 27 through 30 comply with the requirements of 35 USC 112, first paragraph as providing an adequate written description.

The Examiner further rejected the claims 1, 4 through 6, 7, 14 through 16, 17, 20 through 21, 22 and 27 through 30 under 35 USC 112, first paragraph as failing to comply with the enabling requirement. In reply to this rejection, Applicant respectfully submits that in view of the amendments to the claims, the claims 4 through 6, 14 through 16, 20, 21 and 27 through 30 comply with the requirements of 35 USC 112, first paragraph as providing an enabling disclosure.

The Examiner has rejected the claims 1, 7, 17 and 22 stating that the specification fails to teach if the reference light beam is traveling at a direction different from the optical system. Applicant has canceled the claims 1, 7, 17 and 22 without prejudice.

The Examiner has further rejected the claims 1, 4 through 6, 7, 14 through 16, 17, 19, 20 through 21, 22 and 27 through 30 under 35 USC 112, second paragraph. In view of the above amendments to the claims, Applicant respectfully submits that the claims 4 through 6, 14 through 16, 20, 21 and 27 through 30 comply with the requirements of 35 USC 112, second paragraph.

The Examiner has rejected the claims 1 through 6, 7 through 11 and 14 through 16 under 35 USC 103 as being obvious over Orlov et al. in view of Heanue et al. stating that Orlov et al. teaches a holographic storage and retrieval system that is comprised of a first spatial modulator for spatially modulating a light from a source 16 generated an information light or signal light and a reference generator for spatially modulating a light from a source 16 and generating a reference light with the signal for information light and reference light directed to an object lens with the area of the reference light at the entrance of the lens, surrounds the area of the signal or information light and it is implicitly true that the spatial light modulator for modulating the information or signal light implicitly has a plurality of pixels, but does not disclose that the reference generator, disposed at the periphery of the first spatial light modulator, comprises also a spatial light modulator and instead teaches that the reference generator may include a diffuser, lenses, face plate or optical system; Heanue et al. teaches that a diffuser or face plate may be provided by a spatial light modulator; and it would have been obvious to one of ordinary skill in the art to replace the diffuser in Orlov et al. with the spatial light modulator of Heanue et al.

In reply to this rejection, Applicant has carefully reviewed both Orlov et al. and Heanue et al. and respectfully submits that neither discloses that the reference light is in a radial pattern, the traveling direction of the reference light is directed in a direction other than an optical axis and the radial pattern of the reference light is asymmetric with respect to a virtual center, all of which are limitations of Applicant's claims.

Still further, the Examiner points out that the description in Orlov et al. reads that the diffuser 28 produces a speckle pattern in reference beam 32 and is thus adapted for shift speckle multiplexing and suggests that this language discloses a radial pattern. In reply thereto, Applicant respectfully submits that the Examiner is technically incorrect. In particular, Applicant respectfully submits that the reference light of Orlov et al. forms only a speckle pattern when the lights scattered by the diffuser interfere. In other words, Orlov et al. discloses interference between the reference lights and Applicant respectfully submits it is therefore opposite from Applicant's invention.

In addition, Applicant respectfully submits that the advantages of Applicant's invention cannot be achieved by the construction of Orlov et al. or Orlov et al. in conjunction with Heanue et al. In particular, and as exemplified by the attached publication entitled:

"Analysis of a co-linear holographic storage system: Introduction of pixel spread function", the use of a reference light into a radial pattern causes reproduction of the image that is superior to a concentric pattern or a random pattern, such as is used by the prior art.

In view of the above, therefore, Applicant respectfully submits that the combination suggested by the Examiner is not Applicant's invention and the claims 2 through 4 through 6, 8 through 10 and 14 through 16 are not obvious over Orlov et al. in view of Heanue et al.

The Examiner has further rejected the claims 17 through 25, 27 and 28 under 35 USC 103 as being obvious over Orlov et al. in view of Heanue et al. stating that Orlov et al. teaches a holographic storage and retrieval system which is comprised of a first spatial light modulator for spatially modulating a coherent light beam from a light source and generating an information light or signal light and a reference generator for spatially modulating a coherent light from the same light source as for the signal light beam and generating a reference light, the signal or information light and the reference light being directed to a hologram medium for recording, in the recording mode, an interference pattern as a hologram on the medium and in the retrieving mode, the coherent light is modulated by the reference beam to generate a reproduction reference light that passes through an objective lens onto the hologram recording medium where the recorded interference pattern generates a reconstructive light beam that serves as the return beam returned from the medium through the objective lens to a detector for detecting reconstructed signal images, but does not teach that the reference generator comprises a spatial light modulator, but does teach that the reference generator may include a diffuser, lenses, face plate or optical system; Heanue et al. teaches that a diffuser or face plate may be provided by a spatial modulator; and it would have been obvious to one of ordinary skill in the art to modify Orlov et al. in view of the teachings of Heanue et al.

In reply to this rejection, Applicant would like to incorporate by reference his comments above concerning Applicant's invention, Orlov et al. and Heanue et al. In addition, Applicant has further carefully reviewed Heanue et al. and respectfully submits that at column 4, line 18 it merely describes the use of a phase spatial light modulator to modulate the reference beam 22 and does not teach anything about this spatial light modulator being the equivalent of a diffuser or face plate. In addition, Applicant's review of column 9, lines 1 through 10 indicates that taught therein is the use of a face spatial plate modulator in conjunction with a diffuser wherein the face spatial light modulator generates the face

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functions while the diffuser generates the encryption delays. Still further, Applicant respectfully submits that this face spatial light modulator is provided for the purposes of encrypting the data for storage on the holographic medium. Accordingly, Applicant respectfully submits that one of ordinary skill in the art would not look to Heanue et al. to teach a spatial light modulator for generating a reference light by spatially modulating light from said light source by a plurality of pixels and to spatially modulate the reference light into a plurality of radial patterns spreading radially from the area of said reproduction light in the area of said reference light by said spatial light modulator.

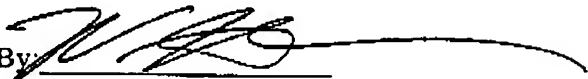
In view of the above, therefore, Applicant respectfully submits that not only is the combination suggested by the Examiner not Applicant's invention but also the combination suggested by the Examiner would not have been suggested to one of ordinary skill in the art. Therefore, Applicant respectfully submits that the claims 18, 20, 21, 23, 24, 27 and 28 would not have been obvious over Orlov et al. in view of Heanue et al.

Applicant further respectfully and retroactively requests a one (1) month extension of time to respond to the Final Office Action and respectfully request that the extension fee in the amount of \$65.00 (Fee Code: 2251) be charged to QUINN EMANUEL DEPOSIT ACCOUNT NO. 50-4367.

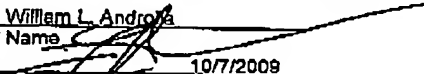
In view of the above, therefore, it is respectfully requested that this Rule 116 Amendment be entered, favorably considered and the case passed to issue.

Please charge any additional costs incurred by or in order to implement this Amendment or required by any requests for extensions of time to QUINN EMANUEL DEPOSIT ACCOUNT NO. 50-4367.

Respectfully submitted,

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